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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,213	06/19/2001	James Battle	108339-00027	9858

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EXAMINER

PIZARRO, RICARDO M

ART UNIT PAPER NUMBER

2616

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/883,213	<b>Applicant(s)</b> BATTLE ET AL.	
	<b>Examiner</b> Ricardo Pizarro	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 8, 10-14 and 17 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 9, 15, 16 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**FINAL ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 , are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 ( Chen) in view of US No.6,658,017 ( Yamamoto)

Regarding claim 1, Chen discloses a system operable to facilitate a Hybrid ATM/TDM transport over a common ring comprising an ingress port interface receiving portions of a data packet (Ingress port interface located on node 14b at 16b in Fig. 1) ; an egress port interface ( Egress port interface located at node 14c at 16c in Fig. 1) connected to ingress ports through an ingress ring (ring 12 in Fig. 1) ; a cell packer, where the cell packer groups packet data into cells ( Cell packer function performed by Segmentation and reassembly device 20b); and a cell unpacker, where the cell unpacker separates stored cells before releasing the cells to an egress port ( Cell unpacker function performed by Segmentation and Reassembly 20 c) .

Chen does not specifically disclose a packet pool memory to store cells in each node of the ring, as in claim 1.

However Yamamoto discloses a Communication network and a node device , comprising a ring network ( Rings a-d in Fig. 7) including a plurality of nodes ( 701 –

704 in Fig. 7) each containing a pool memory for the storage of packets ( Plurality of buffers 709-712 in Fig. 7 ,col 6 lines 46-47, col 7 lines 7-10) , as in claim 1.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Chen by providing the pool means as disclosed by Yamamoto to provide adequate storage means to the Chen system.

The motivation to do so is to obtain a device that can provide an improved way to forward data in a bus ring

Regarding claim 2, comprising a plurality of egress port interfaces ( 16b and 16 c in Fig. 1) and wherein said bus ring is configured such that outputs of one of the plurality of interfaces are physically connected to inputs of an adjacent one of the plurality of egress port interfaces ( outputs are connected to inputs of an adjacent egress port interface in Fig. 1 i.e. 16a and 16b)

Regarding claim 3 each of the plurality of egress port interfaces has a same physical layout ( egress port interfaces 16 b and 16 c contain the same physical elements –layout- in Fig.1)

3. Claim 5, is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 ( Chen) in view of US No. 6,658,017 ( Yamamoto) and further in view of US patent No. 6,862,292 ( Bass)

Chen and Yamamoto do not specifically disclose an egress scheduler communicating with a cell unpacker, where the egress scheduler determines which packet data should be retrieved from the packet pool memory according to priority rules.

However Bass discloses a method for network processor scheduling outputs, comprising an egress scheduler ( Traffic Management scheduler –Egress scheduler 40 in Fig. 1, col 6 lines 21-22) in communication with a cell unpacker ( Substrate 10 where scheduler is embedded is in communication with framer 38 in Fig.1), where the egress scheduler determines which packet data should be retrieved from the packet pool memory ( SRAM devices in Fig. 1) according to priority rules ( col 8 lines 40—43 and 53-55)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Chen and Yamamoto by providing the egress scheduler as in Bass to have a more fair read out of cells in the device.

The motivation to do so is to obtain an improved method for reading out the distribution of information in the device.

4. Claims 7 and 8, are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 ( Chen) in view of US No.6,658,017 ( Yamamoto)and in view of US patent no. 6,862,292 ( Bass) and further in view of US patent No. 6,134,217 ( Stilliadis)

Chen, Yamamoto and Bass do not specifically disclose the priority rules comprising a deficit round robin algorithm, as in claim 7; the priority rules comprising a weighted round robin algorithm, as in claim 8.

However Stilliadis teaches a Traffic scheduling system disclosing priority rules comprising a deficit round robin algorithm( col 3 line 37) , as in claim 7; the priority rules comprising a weighted round robin algorithm( col 3 line 37), as in claim 8.

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Chen, Yamamoto and Bass the priority rules as disclosed by Stilliadis to obtain a more fair scheduling in the system.

The motivation to do so is to obtain work conserving memory unit ( Stilliadis, col 3 line 39).

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 ( Chen) in view of US No.6,658,017 ( Yamamoto) and further in view of US patent No. 6,243,359 ( Roy)

Chen and Yamamoto do not specifically disclose queues configured to determine if a class of service in the queue has reached a limit and purge the packet when the queue has reached the limit, as in claim 10.

However Roy discloses queues configured to determine if a class of service in the queue has reached a limit and purge the packet when the queue has reached the limit ( col 7 lines 45-52), as in claim 10.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Chen and Yamamoto by providing a class of service queue that discards packets after a limit has been reached to better manage traffic in the network via queuing structures.

The motivation to do is to obtain an apparatus capable of improving the performance of traffic in the network.

6. Claims 11 and 12 , are rejected under 35 U.S.C. 103(a) as being

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unpatentable over US patent No. 6,501,758 ( Chen) in view of US No. 6,658,017 ( Yamamoto)

Chen and Yamamoto do not disclose the packer is configured to wait until a cell is filled before sending the cell to the packet pool memory, as in claim 11; wherein a cell length of the cell is 640 bits, as in claim 12.

However it would have been obvious that the cell had to be filled before transmission to the pool memory in order to have the header and payload information completed. In regard to the number of bits in the cell , it would have been obvious as a matter of design choice since applicant has failed to show that the number of bits in the cells would clearly affect the performance of the device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Chen and Yamamoto by having the packet designed to wait for the completion of the cell in order to have all the needed information in the packet.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 ( Chen) in view of US No.6,658,017 ( Yamamoto) and further in view of US patent No. 5,612,964 ( Haraszti)

Chen and Yamamoto do not specifically disclose the device comprising a memory error detector and means to recover from an error.

However Haraszti discloses a memory and method comprising a memory error detector and a means for recovering from a detected memory error ( Error detector and corrector 80 in Fig. 5,col 8 lines 40-44)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Chen and Yamamoto by providing the memory error detection and correction means as in Haraszti to have a better performance in the device.

The motivation to do so is to obtain a more reliable memory unit.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 (Chen) in view of US No. 6,658,017 (Yamamoto) and further in view of US patent No. 6,658,016 (Dai)

Chen and Yamamoto do not disclose a switch fabric having a memory management unit, as in claim 14.

However Dai discloses a packet switching fabric (Switching fabric 10 in Fig. 1) with a memory management device (memory management 42 in Fig. 1)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the memory management unit to a network switch fabric to improve the transfer of packets within the unit.

The motivation to do so is to obtain a switching fabric which provides reduced delays in packet transfer operations and therefore faster switching (Dai, col 3 lines 18-20).

9. Claim 17, is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,501,758 (Chen) in view of US No. 6,658,017 (Yamamoto) and further in view of US patent No. 6,658,016 (Dai)



Chen and Yamamoto do not disclose a message ring connected to ingress ports of the fabric, used to pass message among stations, as in claim 17.

However Dai discloses a Packet switching fabric having a message ring ( Ring 20 in Fig. 1) connected to ingress ports of the fabric , used to pass messages among stations ( col 6 lines 39-41)

Therefore it would have been obvious to one of ordinary skill in the art to modify Chen and Yamamoto by adding a message ring as disclosed by Dai to have the capability of sending messages through the ring.

The motivation to do so to obtain a switching fabric with an additional way of connecting stations and passing messages among stations.

### ***Allowable Subject Matter***

10. Claims 4, 6, 9, 15-16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

### ***Response to Arguments***

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., in contrast to the instant invention Chen discloses a system 10 that has a fiber ring 12 that connects nodes 14 while in the instant invention the **bus ring is a part of the network switch fabric** - page 8 of response-). are not recited in the rejected

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claim(s). Although it is claimed that the ingress and egress sports are connected **through** an ingress bus ring there is no clear indication that the ring is located **within** the unit . Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

**12. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**Any response to this final action should be mailed to:**

**Box AF**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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**or faxed to:**

(571) 273-8300

.(for formal communications; please mark "EXPEDITED PROCEDURE", for informal or draft communications, please label "PROPOSED" or "DRAFT" )

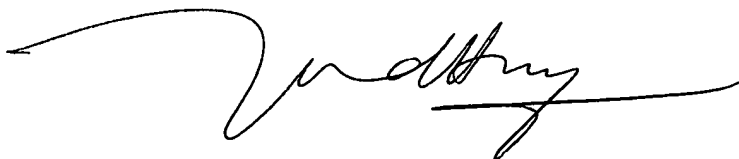
Hand-delivered responses should be brought to 22- 20<sup>th</sup> Street S, Crystal Plaza Two, Lobby, Room 1B03, Arlington , VA 22202 ( Customer window).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ricardo Pizarro** whose telephone number is **(571) 272-3077**. The examiner can normally be reached on Monday-Thursday from 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Huy Vu** can be reached on (571) 272-3155.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 12, 2006  
Ricardo Pizarro



**HUY D. VU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**